

***What Is Claimed Is:***

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a sequence selected from the group consisting of:

5 (a) a nucleotide sequence encoding a polypeptide comprising amino acids from about 1 to about 127 in SEQ ID NO:2;

(b) a nucleotide sequence encoding a polypeptide comprising amino acids from about 2 to about 127 in SEQ ID NO:2;

10 (c) a nucleotide sequence encoding a polypeptide having the amino acid sequence encoded by the cDNA clones contained in ATCC Deposit No. 97175 or 97856; and

(d) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b) or (c).

15 2. An isolated nucleic acid molecule comprising a polynucleotide which encodes the amino acid sequence of an epitope-bearing portion of an BCSG1 polypeptide having an amino acid sequence in (a), (b), (c) or (d) of claim 1.

20 3. The isolated nucleic acid molecule of claim 7, which encodes an epitope-bearing portion of a BCSG1 polypeptide selected from the group consisting of: a polypeptide comprising amino acid residues from about 94 to about 107 in Figure 1 (SEQ ID NO:2); and a polypeptide comprising amino acid residues from about 120 to about 127 in Figure 1 (SEQ ID NO:2).

25 ✓ 4. An isolated nucleic acid molecule, comprising a polynucleotide having a sequence selected from the group consisting of:

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(a) the nucleotide sequence of a fragment of the sequence shown in SEQ ID NO:1, wherein said fragment comprises at least 50 contiguous nucleotides of SEQ ID NO:1; and

(b) a nucleotide sequence complementary to a nucleotide sequence in (a).

5. A method for making a recombinant vector comprising inserting an isolated nucleic acid molecule of claim 1 into a vector.

6. A recombinant vector produced by the method of claim 5.

7. A method of making a recombinant host cell comprising introducing the recombinant vector of claim 6 into a host cell.

8. A recombinant host cell produced by the method of claim 7.

9. A recombinant method for producing any of the BCSG1 polypeptides, comprising culturing the recombinant host cell of claim 8 under conditions such that said polypeptide is expressed and recovering said polypeptide.

10. An isolated BCSG1 polypeptide having an amino acid sequence at least 95% identical to a sequence selected from the group consisting of:

(a) amino acids from about 1 to about 127 in SEQ ID NO:2;  
(b) amino acids from about 2 to about 127 in SEQ ID NO:2;  
(c) the amino acid sequence of the BCSG1 polypeptide having the amino acid sequence encoded by the cDNA clones contained in ATCC Deposit No. 97856 or 97175; and

(d) the amino acid sequence of an epitope-bearing portion of any one of the polypeptides of (a), (b) or (c).

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11. An isolated polypeptide comprising an epitope-bearing portion of the BCSG1 protein, wherein said portion is selected from the group consisting of: a polypeptide comprising amino acid residues from about 94 to about 107 in Figure 1 (SEQ ID NO:2); and a polypeptide comprising amino acid residues from about 120 to about 127 in Figure 1 (SEQ ID NO:2).

12. An isolated antibody that binds specifically to a BCSG1 polypeptide of claim 10.

13. An isolated nucleic acid molecule comprising a polynucleotide encoding a BCSG1 polypeptide wherein, except for one to fifty conservative amino acid substitutions, said polypeptide has a sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a polypeptide comprising amino acids from about 1 to about 127 in SEQ ID NO:2;

(b) a nucleotide sequence encoding a polypeptide comprising amino acids from about 2 to about 127 in SEQ ID NO:2;

(c) a nucleotide sequence encoding a polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97175 or 97856; and

(d) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b) or (c).

14. An isolated BCSG1 polypeptide wherein, except for at least one conservative amino acid substitution, said polypeptide has a sequence selected from the group consisting of:

(a) amino acids from about 1 to about 127 in SEQ ID NO:2;

(b) amino acids from about 2 to about 127 in SEQ ID NO:2;

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(c) the amino acid sequence of the BCSG1 polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97175 or 97856; and

(d) the amino acid sequence of an epitope-bearing portion of any one of the polypeptides of (a), (b) or (c).

15. A method for breast tumor diagnosis in an individual comprising assaying the expression level of the gene encoding the BCSG1 protein in cells or body fluid of the individual and comparing the gene expression level with a standard BCSG1 gene expression level, whereby an increase in the gene expression level over the standard is indicative of malignant breast cancer.

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